Quality Control During Maintenance

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I Organizing age old methods:

- * Approval.
- Documenting.
- Ownership.
- Closeout.

Approval:

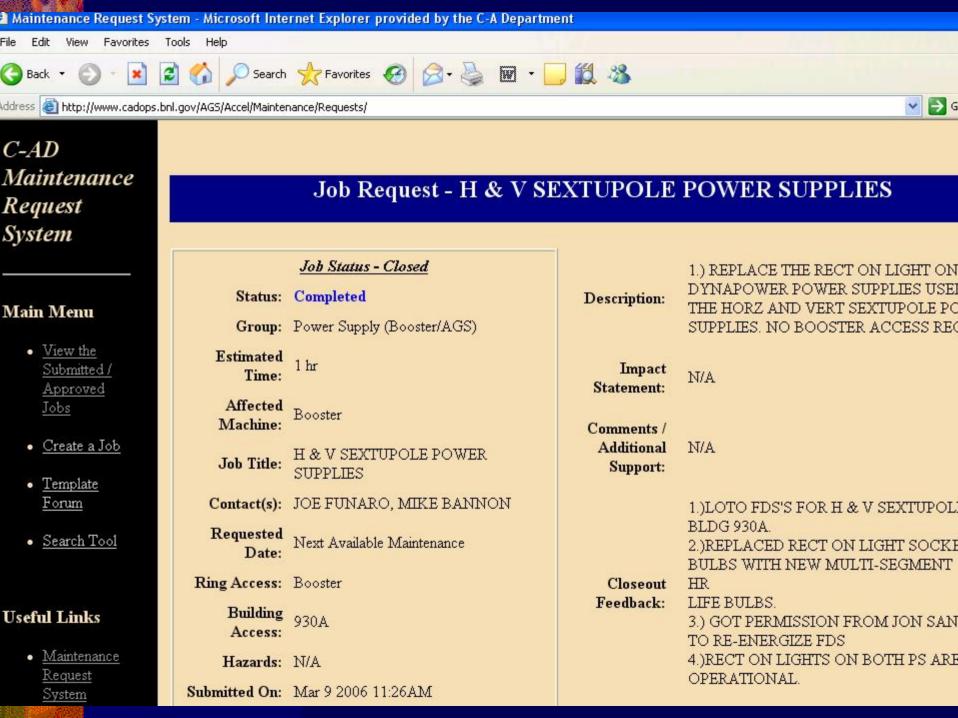
- All jobs must be submitted and approved.
- Approval criteria includes:
 - Compatibility with other jobs.
 - Urgency.
 - Work plan.
 - Closeout testing 'procedure'.

Documenting:

- Jobs are stored in a database for later reference.
- Can be re-called or referenced for repeat jobs.

Ownership:

- For most jobs, affected systems will be assigned an 'owner'.
 - Included Job Submission/Work Plan.
 - Owners must agree that associated systems have recovered before the primary job can be completed.
- May have multiple owners
 - Examples are water systems repair, computer system repair upgrade, power outage.



• Begin RHIC Sweeps.

• Rack in STAR

1530

day, May 30, 20)06 1515 hrs		
		Critical Jobs	
Group		Job Title	Time Required
Beam Components & Instrumentation		RHIC Abort Kicker Diagnostic Test	8 hrs
Power Distribution		Exercise Subst 1004B&C circuit breakers	1 hr
Power Supply (RHIC)		Voltage monitoring work in sector 1	6 hrs
Acces	ss Controls	Test Crash Operators at PHENIX	1 hr
Time	Job		Manpower
0730	Begin AGS LOTO.		2CAS
0730	Dump RHIC store.		20/10
0800	Call STAR and request that they begin ramp down.		2 MCR
	Survey Dump areas, all other RHIC to RA.		1 HP
	Open 8Z1 plug for crash test.		2 Support
	CAS to STAR to rack out Main Supply.		
0830	 All RHIC to RA. Access AGS for Jump Target, RF Station C and DE and Survey. HP to enter with RF and 		1MCR
0830	 instrumentation personnel, surveying each area sequentially. HP to survey AtR. 		2HP
0900	AtR to Restricted Access. Begin test of Substation 4B and C.		
1300	Sweep AtR.		2 CAS
1430	Sweep AGS.		5 CAS/MCR

4MCR/CAS

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Duration and Start time of maintenance:

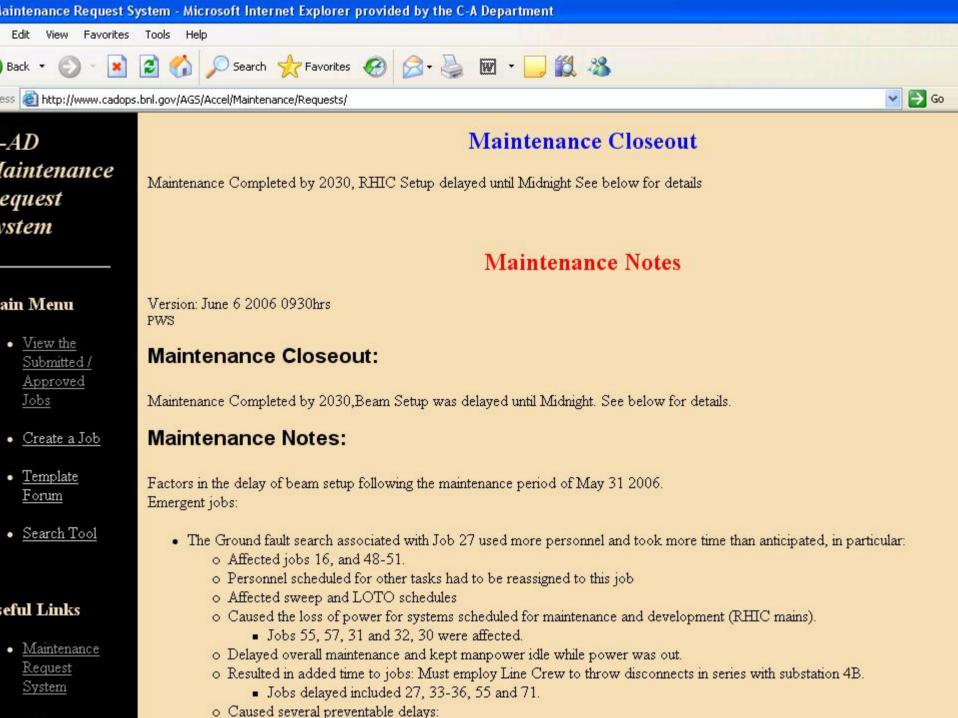
- The length of maintenance determined by longest critical job.
- Job may require specific start time.
 - Personnel considerations.
- Individual areas or machined are scheduled for testing as soon as possible.
 - Areas not associated with the critical job are swept and secured prior to the official end of maintenance.
- Some tests require that RHIC Sweeps completed.
 - Compatibility with experiments.

Personnel Management:

- The Maintenance Coordinator shall direct personnel during the maintenance period.
- LOTO:
 - Time consuming.
 - Adds to beginning and end effects.
 - Delays all Booster and AGS jobs.
 - Uses personnel resources.
 - Potential failures.
 - Specific teams assigned for recovery.

Handoff to operations:

*As machines become available, they are officially handed off to operations.



Problems:

- Personnel.
 - Not enough.
 - Long hours.
- Schedule.
 - No real PM time.
 - Late starts.
 - Unrealistic.
 - Delays.
- Equipment failure during recovery.
 - Unrelated failure: LOTO.
 - Uncompleted checkout of Equipment.